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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/724,831

12/02/2003

Hirofumi Kuwabara

246072US3

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22850

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02/14/2006

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ALEXANDRIA, VA 22314

EXAMINER

TAMAI, KARL I

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,831

Applicant(s)

KUWABARA ET AL.

Examiner

Tamai I.E. Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/19/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The rejection of Claims 1, 6, 8, 14, and 16-20 over Mobius et al. (Mobius)(WO 00/149859) is withdrawn.
2. The rejection of Claims 1, 11, 14, 18, and 20 over Amamiya et al. (Amamiya)(JP 62-193540) is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 1-3, 8, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada ('687)(JP 07-107687) and Yamada et al. (Yamada)(US 5734216). '687 teaches a rotor having permanent magnets 2 mounted on a rotor 4 with continuous circumferential grooves 8 around the rotor. The thickness of the adhesive is in part determined by the grooves 8. '687 does not teach the thickness of the adhesive agent absorbing the stress of thermal expansion between the rotor and stator, or the groove depth/spacers/adhesive layer is in the range of 0.05 mm to 0.2 mm. Yamada teaches the thickness of the adhesive agent absorbing the stress of thermal expansion between the rotor and stator to prevent damage to the magnet. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the rotor of '687 with the thickness of the adhesive agent absorbing the stress of thermal expansion between the rotor and stator to prevent damage and being in the range of 0.05 mm to 0.2 mm to the magnets as taught by Yamada.

6. Claims 4, 5, 9, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada ('687)(JP 07-107687) and Yamada et al. (Yamada)(US 5734216). '687 and Yamada teach every aspect of the invention except the thickness range being 0.075-0.175 or 0.1-0.15 mm, or the difference in the coefficient of thermal expansion being greater than 10.4×10^{-6} . Yamada teaches the thickness of the adhesive layer and the difference in the coefficient of thermal expansion are result effective variables to prevent breakage of the rare earth magnet. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the

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motor of '687 and Yamada with the thickness of the determining means being 0.075-0.175 or 0.1-0.15 mm or the difference in the coefficient of thermal expansion being greater than 10.4×10^{-6} to prevent breakage of the magnet at high temperatures as taught by Yamada.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada ('687)(JP 07-107687) and Yamada et al. (Yamada)(US 5734216). '687 and Yamada teach every aspect of the invention except the rotor being steel and the magnet being rare earth. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of '687 and Yamada with a steel rotor with rare earth permanent magnets to provide a durable magnet with favorable magnetic qualities, and because selection of materials based on intended use is within the ordinary skill in the art (see *In re Leshin*, 125 USPQ 416).

8. Claims 14, 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada ('687)(JP 07-107687) and Yamada et al. (Yamada)(US 5734216), and Maruta (JP 09-140,077). '687 and Yamada teach every aspect of the invention except the thickness determining means corresponds to 48% or more of the axial direction and the surface coverage being between 48-65% or a thickness determining means between the rotor and stator or a thickness determining means being a projection of the rotor. Maruta teaches a projection 50/51 in the rotor which determines the thickness of the adhesive between the rotor and stator (figure 2).

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Maruta teaches the adhesive covering more than 50% of the magnet in the axial direction with a thickness determining means 25 in the groove between the rotor and magnet. The combined teachings of '687 showing a small adhesive groove and Maruta showing a large adhesive groove suggests to a person of ordinary skill in the art that the adhesive groove can be somewhere between the two sizes. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of '687 and Yamada with the 48-65 % of the magnet opposed to the rotor being '687 adhered by the adhesive layer and with a thickness determining means between the rotor and magnet to provide a stable bond between the magnet and rotor as taught by Maruta.

Allowable Subject Matter

9. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new grounds of rejection.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (571) 273 - 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
February 8, 2006

KARL TAMAI
PRIMARY EXAMINER

